Electronic Supporting Information

Photoinduced electron transfer in a carbon nanohorn-C_{60} conjugate

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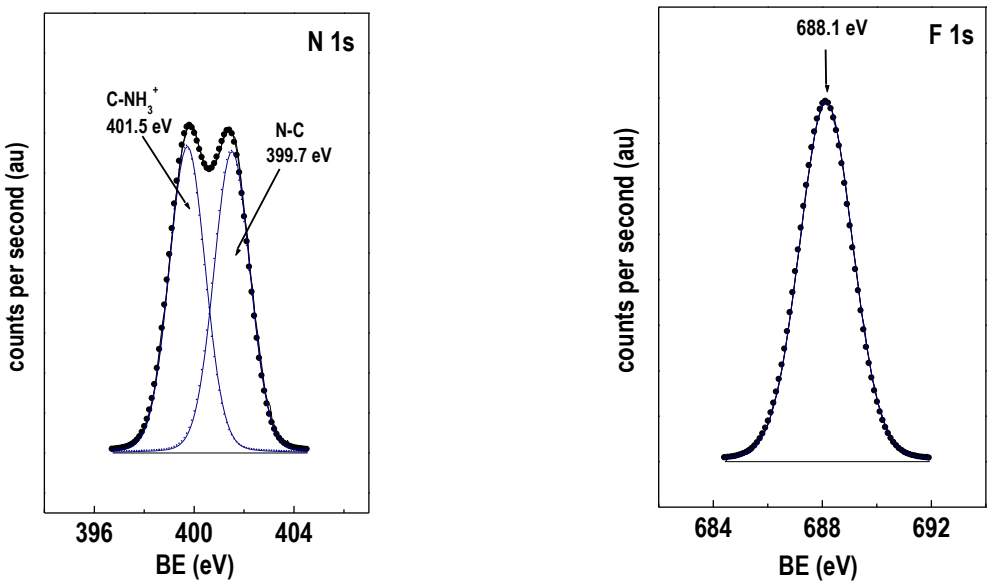

Fig. S1 N 1s and F 1s core-level spectra of **CNH-sp-$NH_3^+F^-$**

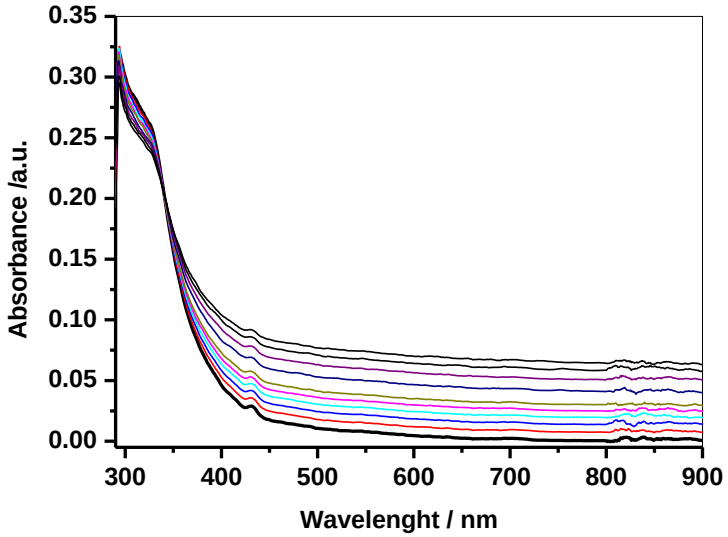

Fig. S2 Absorption spectral changes of crown-C_{60} (black line: 7.15×10^{-6} M in benzonitrile) on addition of increasing amounts of **CNH-sp-NH_3^+** (concentration 1 mg/100 mL; from 100 µL to 1500 µL, in 2mL benzonitrile).

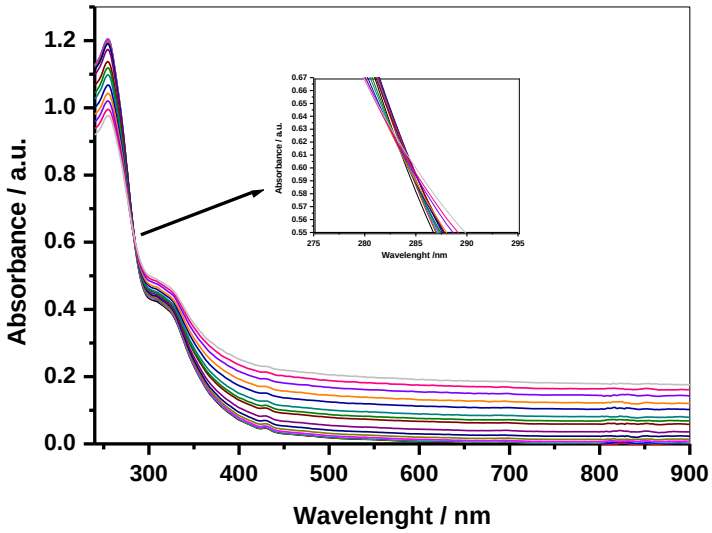

Fig. S3 Control experimental: Absorption spectral changes of **crown-C_{60}** (black line: 3.75×10^{-6} M in dichloromethane) on addition of increasing amounts of *pristine* **CNH** (concentration 1 mg/100 mL; from 10 µL to 1700 µL, in 2mL dichloromethane); in the inset, spectra of wavelength expansion.

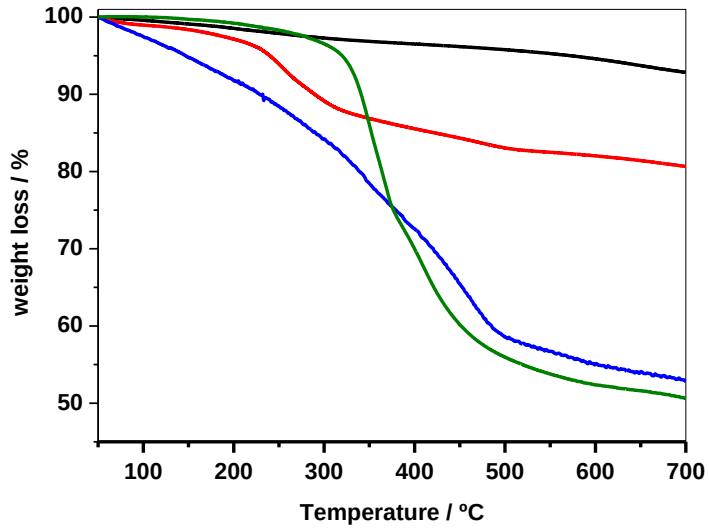

Fig. S4 Thermograhs of **CNH-COOH** (black), **CNH-sp-NH_3^+**(red), **[CNH-sp-NH_3^+;crown-C_{60}]** (blue) and **crown-C_{60}** (olive). The temperature interval (200-500 ºC) represents the steepest weight loss due to organic decompositions.

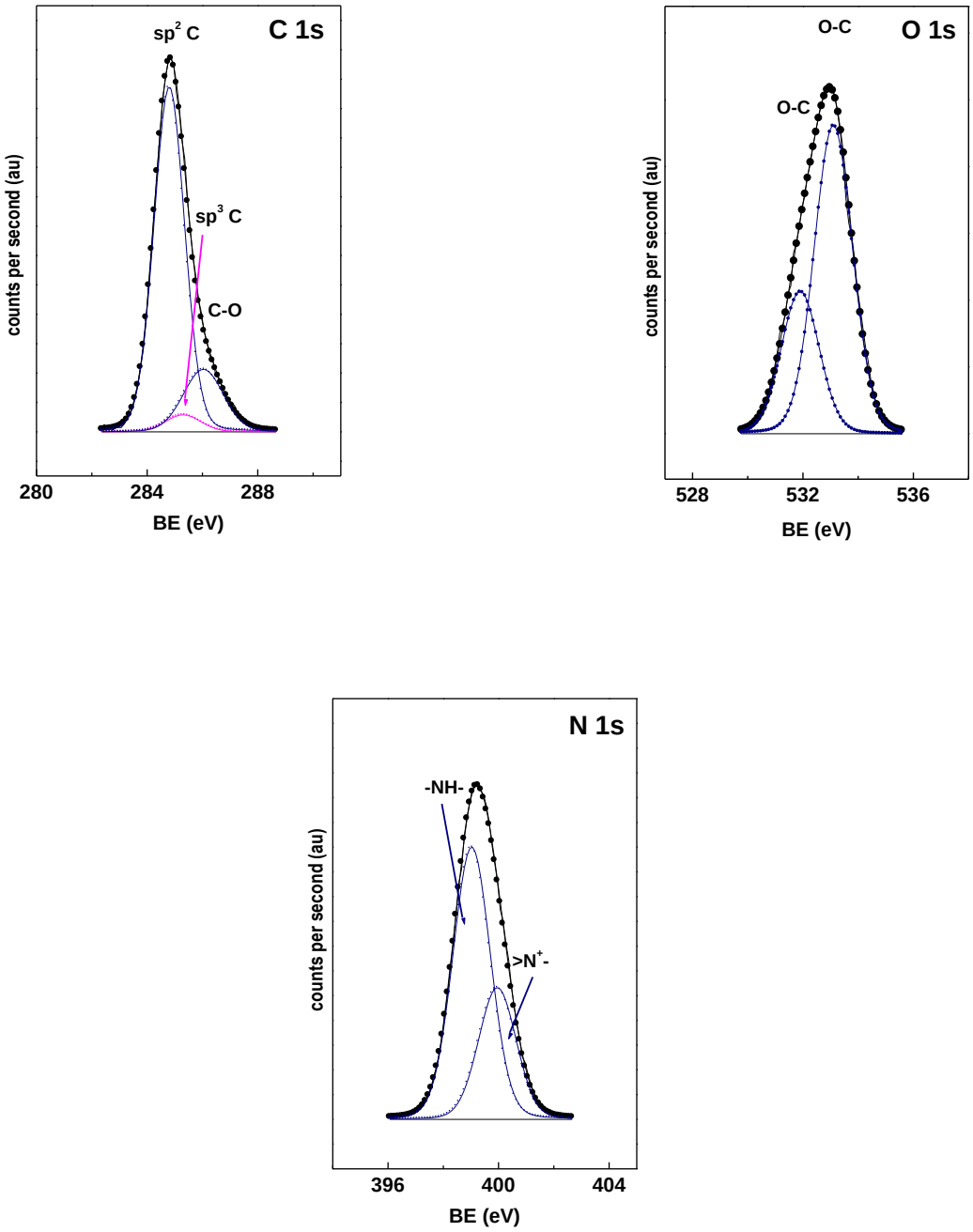

Fig. S5 C 1s, O 1s and N 1s core-level spectra of [**CNH-sp-NH_3^+;crown-C_{60}**] nanohybrid.

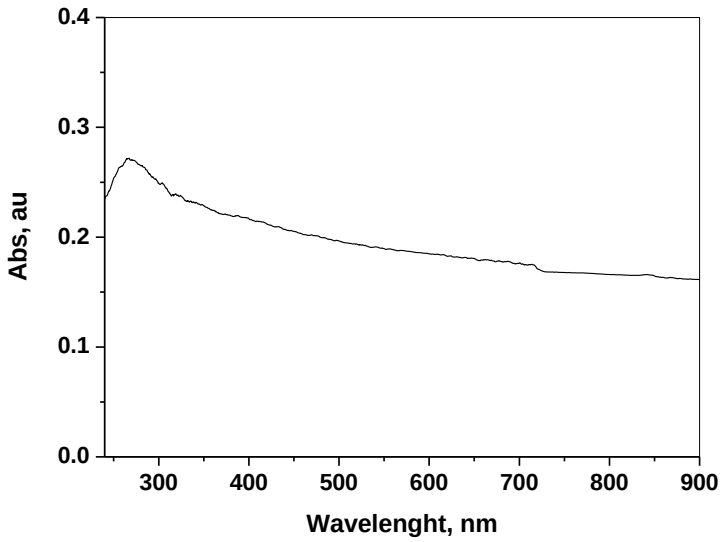

Fig. S6 UV-vis-NIR absorption spectrum of CNH-sp-NH_3^+ (0.01 mg mL^{-1}) in CH_2Cl_2.

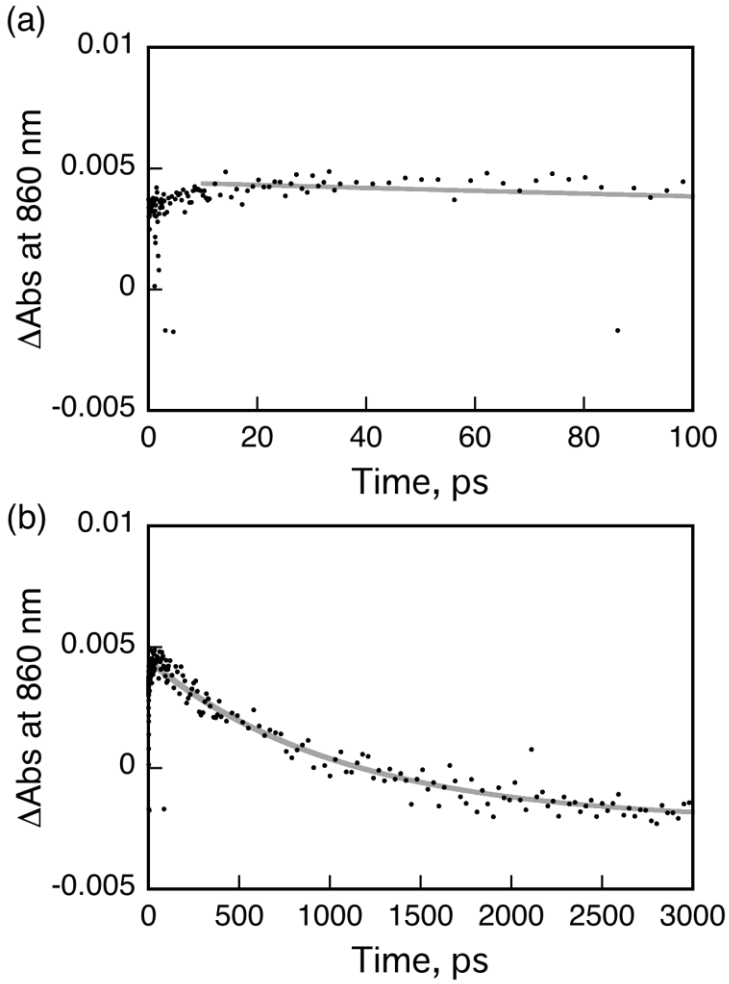

Fig. S7 Time profile of absorbance at 860 nm up to 100 ps for the transient absorption spectra observed upon femtosecond laser excitation at 393 nm of a PhCN solution of CNH-sp-NH_3^+ (0.5 mg mL^{-1}) and crown-C_{60} (2.0×10^{-4} M).

Table S1. Binding Energies (eV) of **Crown-C_{60}**, **CNH-COOH**, **CNH-sp-$NH_3^+F^-$** and [**CNH-sp-NH_3^+;crown-C_{60}**]. In parentheses are peak percentages.

Sample	BE (eV) C 1s (%)							BE (eV) O 1s (%)		BE (eV) N 1s (%)
	sp^2 C	sp^3 C	C-O	C=O	COO	π–π*	C-N*	O-C	O=C	
crown-C_{60}	284.8 (66)	285.3 (4)	286.3 (21)	287.5 (5)	289.2 (4)	-	286.3 (21)**	533.8 (49)	532.5 (51)	399.7
CNH-COOH	284.8 (65)	-	286.2 (18)	287.5 (6)	289.1 (7)	291.3 (4)	-	533.9 (49)	532.5 (51)	
CNH-sp-$NH_3^+F^-$*	284.8 (65)	-	286.3 (20)	287.6 (7)	289.3 (7)	-	286.3 (20)**	533.8 (52)	532.4 (48)	401.5 (50) 399.7 (50)
CNH-sp-NH_3^+;crown-C_{60}	284.8 (78)	285.3 (4)	286.3 (18)	-	-	-	286.3 (18)**	533.1 (69)	531.9 (31)	400.0 (32) 399.0 (68)

* This sample shows an additional F 1s Peak at a BE of 688.1 eV

** As the binding energies of C 1s (C-O) and N 1s (N-C) are similar, BEs and peak percentages are common for the same peak component.

Table S2. Surface Atomic Composition of **Crown-C_{60}**, **CNH-COOH**, **CNH-sp-$NH_3^+F^-$** and [**CNH-sp-NH_3^+;crown-C_{60}**]

sample	C (%at)	O (%at)	N (%at)	F (%at)
crown-C_{60}	87.5	11.5	1.0	-
CNH-COOH	91.0	9.0	-	-
CNH-sp-$NH_3^+F^-$	88.0	10.75	0.8	0.45
CNH-sp-NH_3^+;crown-C_{60}	94.3	5.0	0.7	-